

### **REMARKS**

Claims 1, 12 and 21-25 have been canceled. Claims 2, 4-7, 9-11, 13-14 and 16-20 have been amended. Claims 2-11 and 13-20 are pending in the application. In view of the foregoing amendments, and the remarks that follow, Applicants respectfully request reconsideration.

#### **Claims 21-25**

Claims 21-25 were withdrawn from examination, pursuant to a restriction requirement. The foregoing amendments therefore cancel Claims 21-25. However, Applicants reserve the right to eventually file a divisional application that presents the subject matter of Claims 21-25 for examination on the merits.

#### **Claims 7, 9, 17 and 18 – Converted to Independent Form**

The limitations of Claim 1 have been added to each of Claims 7 and 9, in order to place Claims 7 and 9 in independent form. The limitations of Claim 12 have been added to Claim 18, in order to place Claim 18 in independent form. The limitations of Claims 12 and 15-16 have been added to Claim 17, in order to place Claim 17 in independent form.

#### **Second Paragraph of 35 U.S.C. §112**

The Office Action rejected Claim 12 under the second paragraph of 35 U.S.C. §112, indicating that there is no antecedent basis for the first occurrence of “said dielectric”. As discussed above, Claim 12 has been canceled, but limitations from Claim 12 have been added to each of Claims 7 and 9. In the limitations from Claim 12 that have been added to Claims 7 and 9, the first reference to “said dielectric” has been changed to “a dielectric”. Consequently, it is respectfully submitted that the claims containing limitations from Claim 12 are in compliance with the second paragraph of §112.

The Office Action also rejected Claim 9 under the second paragraph of §112. In more detail, Claim 9 recited first and second thicknesses. The Office Action asserts that these recited thicknesses are thicknesses of sidewall spacers. However, the thicknesses recited in Claim 9 are actually the thicknesses of respective portions of a dielectric layer that is disposed between the recited substrate and the recited gates. The Office Action recognizes that this is the case (at lines 11-12 on page 3). The foregoing amendments fine-tune the language of Claim 9 to more clearly recite the differing thicknesses of the dielectric material between the gates and the substrate. It is respectfully submitted that Claim 9 is in compliance with the second paragraph of §112, and notice to that effect is respectfully requested.

#### Objection to Drawings

The Office Action objected to the drawings under 37 C.F.R. §1.83(a), asserting that they do not show every feature recited in the claims. In particular, and as noted above, the Office Action took the position that the claims recite differing thicknesses for some sidewall spacers. The Office Action then stated that that the drawings are problematic because they do not show sidewall spacers with differing thicknesses. However, as discussed above, what the claims are actually reciting is gate dielectric material of differing thicknesses. The drawings do show a dielectric layer with differing thicknesses (for example at 54a and 54b in Figure 5). Accordingly, the differing thicknesses recited in the claims are in fact shown in the drawings, and the drawings are thus in compliance with §1.83(a). Notice to that effect is respectfully requested.

#### Independent Claim 18

As discussed above, the limitations of Claim 12 have been added to Claim 18, in order to place Claim 18 in independent form. Claim 18 stands rejected under 35 USC §103 as obvious in view of a proposed combination of teachings from Kasuya U.S. Patent No. 6,753,215 and Xiang U.S. Published Application No. 2005/0054164. This ground of rejection is respectfully traversed. In this regard, the PTO recognizes in MPEP §2142 that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that the teachings drawn from Kasuya and Xiang fail to establish a *prima facie* case of obviousness under §103 with respect to Claim 18, for the mutually exclusive reasons that are discussed below.

THE PROPOSED COMBINATION DOESN'T TEACH THE CLAIMED SUBJECT MATTER

The MPEP repeatedly emphasizes the requirement that, in order to establish obviousness under §103, "the prior art reference (or references when combined) must teach or suggest all the claim limitations" (emphasis added). The PTO considers this requirement to be important, as evidenced by the fact that this exact language appears at several different locations in the MPEP, for example in each of MPEP §706.02(j), MPEP §2142, and MPEP §2143.

In the present application, Claim 18 recites:

wherein said dielectric layer for a first group of said metal silicide gates is a first thickness, wherein said dielectric layer for a second group of said metal silicide gates is a second thickness, and wherein said first and second thicknesses are not equal.

Neither Kasuya nor Xiang appears to disclose an arrangement in which a dielectric material below one gate has one thickness and a dielectric material below another gate has a different thickness. The Office Action asserts that a specific dimensional value is obvious in the absence of a disclosure that the value is for an unobvious purpose, produces an unexpected result, or is

otherwise critical. However, Applicants are not claiming a specific dimensional value in Claim 18. Applicants are claiming that two elements have different thicknesses, without regard to any particular dimensions for those thicknesses. Kasuya and Xiang do not separately or together teach this recited structural relationship, and thus do not teach all of the limitations of Claim 18. Therefore, for this independent reason alone, it is respectfully submitted that Claim 18 is not obvious under §103 in view of Kasuya and Xiang, and notice to that effect is respectfully requested.

#### THE PROPOSED MODIFICATION OF KASUYA IS IMPROPER

Even assuming that the foregoing argument does not apply (which is clearly not the case), there is yet another reason why the proposed modification of Kasuya is not proper under §103. In this regard, MPEP §2142 provides that:

To reach a proper determination under §103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. . . . Knowledge of applicant's disclosure must be put aside in reaching this determination, . . . impermissible hindsight must be avoided, and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

In addition, the MPEP provides at § 2143.01 that:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. . . . Although a

prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so". (Emphasis in original).

In the present application, the Office Action essentially proposes that it would be obvious to modify Kasuya to provide a dielectric material of one thickness below one gate, and a dielectric material with a different thickness below another gate. However, the Office Action does not contain any mention at all of motivation, much less an explanation of why a person skilled in the art would be motivated to make the proposed modification, still less why the prior art would serve as the basis for this motivation. It is thus respectfully submitted that the present §103 rejection of Claim 18 is incomplete, because it fails to demonstrate the motivation that is required by the MPEP. In effect, the §103 rejection of Claim 18 is based on hindsight of the present invention, rather than on motivation properly derived from what was known prior to the present invention. Accordingly, for this independent reason alone, it is respectfully submitted that Claim 18 is not rendered obvious under §103 by Kasuya and Xiang, and notice to that effect is respectfully requested.

In view of the various different reasons discussed above, it is respectfully submitted that Claim 18 is not rendered obvious under §103 by Kasuya and Xiang. Claim 18 is therefore believed to be allowable, and notice to that effect is respectfully requested.

#### Independent Claim 9

As discussed above, the limitations of Claim 1 have been added to Claim 9, in order to place Claim 9 in independent form. Claim 9 stands rejected under 35 USC §103 as obvious in view of Kasuya. This ground of rejection is respectfully traversed. As noted above, MPEP §2142 provides that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that Kasuya fails to establish a *prima facie* case of obviousness under §103 with respect to Claim 9, for the mutually exclusive reasons that are discussed below.

#### KASUYA DOESN'T TEACH THE CLAIMED SUBJECT MATTER

As discussed above, the MPEP repeatedly emphasizes the requirement that, in order to establish obviousness under §103, "the prior art reference (or references when combined) must teach or suggest all the claim limitations" (emphasis added). The PTO considers this requirement to be important, as evidenced by the fact that this exact language appears at several different locations in the MPEP, for example in each of MPEP §706.02(j), MPEP §2142, and MPEP §2143.

In the present application, Claim 9 recites:

wherein a dielectric layer between said substrate and a first group of said metal silicide gates has a first thickness, wherein a dielectric layer between said substrate and a second group of said metal silicide gates has a second thickness, and wherein said first and second thicknesses are not equal.

Kasuya does not appear to disclose an arrangement in which a dielectric material below one gate has one thickness and a dielectric material below another gate has a different thickness. The Office Action asserts that a specific dimensional value is obvious in the absence of a disclosure that the value is for a particular unobvious purpose, produces an unexpected result, or is

otherwise critical. However, Applicants are not claiming a specific dimensional value in Claim 9. Applicants are claiming that two elements have different thicknesses, without regard to any particular dimensions for those thicknesses. Kasuya does not teach this recited structural relationship, and thus does not teach all of the limitations of Claim 9. Therefore, for this independent reason alone, it is respectfully submitted that Claim 9 is not obvious under §103 in view of Kasuya, and notice to that effect is respectfully requested.

#### THE PROPOSED MODIFICATION OF KASUYA IS IMPROPER

Even assuming that the foregoing argument does not apply (which is clearly not the case), there is yet another reason why the proposed modification of Kasuya is not proper under §103. In this regard, MPEP §2142 provides that:

To reach a proper determination under §103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. . . . Knowledge of applicant's disclosure must be put aside in reaching this determination, . . . impermissible hindsight must be avoided, and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

In addition, the MPEP provides at § 2143.01 that:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. . . . Although a prior art device "may be capable of being modified to run the way

the apparatus is claimed, there must be a suggestion or motivation in the reference to do so". (Emphasis in original).

In the present application, the Office Action essentially proposes that it would be obvious to modify Kasuya to provide a dielectric material of one thickness below one gate, and a dielectric material with a different thickness below another gate. However, the Office Action does not contain any mention at all of motivation, much less an explanation of why a person skilled in the art would be motivated to make the proposed modification, still less why the prior art would serve as the basis for this motivation. It is thus respectfully submitted that the present §103 rejection of Claim 9 is incomplete, because it fails to demonstrate the motivation that is required by the MPEP. In effect, the §103 rejection of Claim 9 is based on hindsight of the present invention, rather than on motivation properly derived from what was known prior to the present invention. Accordingly, for this independent reason alone, it is respectfully submitted that Claim 9 is not rendered obvious under §103 by Kasuya, and notice to that effect is respectfully requested.

In view of the various different reasons discussed above, it is respectfully submitted that Claim 9 is not rendered obvious under §103 by Kasuya. Claim 9 is therefore believed to be allowable, and notice to that effect is respectfully requested.

#### Independent Claim 7

As discussed above, the limitations of Claim 1 have been added to Claim 7, in order to place Claim 7 in independent form. Claim 7 stands rejected under 35 USC §103 as obvious in view of a proposed combination of teachings from Kasuya and Xiang. This ground of rejection is respectfully traversed. As discussed earlier, MPEP §2142 explains that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not



produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that the teachings drawn from Kasuya and Xiang fail to establish a prima facie case of obviousness under §103 with respect to Claim 7, for the following reason.

THE PROPOSED COMBINATION DOESN'T TEACH THE CLAIMED SUBJECT MATTER

The MPEP repeatedly emphasizes the requirement that, in order to establish obviousness under §103, "the prior art reference (or references when combined) must teach or suggest **all** the claim limitations" (emphasis added). The PTO considers this requirement to be important, as evidenced by the fact that this exact language appears at several different locations in the MPEP, for example in each of MPEP §706.02(j), MPEP §2142, and MPEP §2143.

In the present application, Claim 7 recites:

... depositing a metal layer overlying said polysilicon lines;

thermally annealing to completely convert said polysilicon lines to metal silicide gates; and

removing unreacted said metal layer to complete said device; ...

depositing a second metal layer overlying said substrate, said spacers, and said hard mask layer prior to said step of partially etching down said polysilicon lines;

thermally annealing to convert a part of said substrate in  
said second doped regions to metal silicide; and  
removing unreacted said second metal layer.

Claim 7 thus recites two separate metal layers. The Office Action asserts (lines 12-13 on page 4) that the first of these two layers is met by the layer 36 of Kasuya. The Office Action then asserts (line 6 on page 6) that the second of these two layers is also met by layer 36 of Kasuya. It should thus be clear that the rejection fails to establish a *prima facie* case that Kasuya discloses two separate metal layers that are comparable to the two separate metal layers recited in Claim 7. The Office Action relies on Xiang for other teachings, and does not assert that Xiang would cure this defect in Kasuya. It is therefore respectfully submitted that the rejection fails to establish that Kasuya and Xiang teach all of the limitations of Claim 7. Accordingly, it is respectfully submitted that Claim 7 is not obvious under §103 in view of Kasuya and Xiang, and notice to that effect is respectfully requested.

#### Independent Claim 17

As discussed above, the limitations of Claims 12 and 15-16 have been added to Claim 17, in order to place Claim 17 in independent form. Claim 17 stands rejected under 35 USC §103 as obvious in view of a proposed combination of teachings from Kasuya and Xiang. This ground of rejection is respectfully traversed. As discussed earlier, MPEP §2142 explains that:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

Applicants respectfully submit that the teachings drawn from Kasuya and Xiang fail to establish a prima facie case of obviousness under §103 with respect to Claim 17, for the following reason.

THE PROPOSED COMBINATION DOESN'T TEACH THE CLAIMED SUBJECT MATTER

The MPEP repeatedly emphasizes the requirement that, in order to establish obviousness under §103, "the prior art reference (or references when combined) must teach or suggest all the claim limitations" (emphasis added). The PTO considers this requirement to be important, as evidenced by the fact that this exact language appears at several different locations in the MPEP, for example in each of MPEP §706.02(j), MPEP §2142, and MPEP §2143.

In the present application, Claim 17 recites:

... depositing a metal layer overlying said polysilicon  
lines;  
thermally annealing to completely convert said polysilicon  
lines to metal silicide gates; and  
removing unreacted said metal layer to complete said  
device; ...  
depositing a second metal layer overlying said substrate,  
said spacers, and said hard mask layer;  
thermally annealing to convert a part of said substrate in  
said second doped regions to metal silicide; and  
removing unreacted said second metal layer.

Claim 17 thus recites two separate metal layers. The Office Action asserts (lines 12-13 on page 4) that the first of these two layers is met by the layer 36 of Kasuya. The Office Action then

asserts (lines 5-6 on page 7) that the second of these two layers is also met by layer 36 of Kasuya. It should thus be clear that the rejection fails to establish a prima facie case that Kasuya discloses two separate metal layers that are comparable to the two separate metal layers recited in Claim 17. The Office Action relies on Xiang for other teachings, and does not assert that Xiang would cure this defect in Kasuya. It is therefore respectfully submitted that the §103 rejection fails to establish that Kasuya and Xiang teach all of the limitations of Claim 17. Accordingly, it is respectfully submitted that Claim 17 is not obvious under §103 in view of Kasuya and Xiang, and notice to that effect is respectfully requested.

#### Dependent Claims

Claims 2-3, Claims 4-6, 8 and 10-11, and Claims 13-16 and 19-20 respectively depend from Claim 7, Claim 9, and Claim 18, and are also believed to be distinct from the art of record, for example for the same reasons discussed above with respect to Claims 7, 9 and 18, respectively.

#### Conclusion

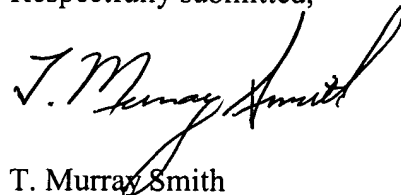
Based on the foregoing, it is respectfully submitted that all of the pending claims are fully allowable, and favorable reconsideration of this application is therefore respectfully requested. If the Examiner believes that examination of the present application may be advanced in any way

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by a telephone conference, the Examiner is invited to telephone the undersigned attorney at  
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Respectfully submitted,



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